

**ABSTRACT OF THE DISCLOSURE**

A method for humidifying and controlling the temperature of a process gas stream comprising the steps of super-saturating and heating the process gas stream with steam until it reaches a first pre-set temperature; cooling the process gas stream until it reaches a second pre-set temperature; removing excess condensed water from the process gas stream; and heating the process gas stream until it reaches a third pre-set temperature. An apparatus for implementing this method is also disclosed.